

### **REMARKS**

This is a full and timely response to the Final Office Action mailed February 12, 2008. Reconsideration of the application and allowance of presently pending claims as amended, are respectfully requested.

#### **A. Present Status of Patent Application**

Upon entry of the amendments in this response, claims 1-13, 16-17, 29-30, 32-39, 41, 43-47 and 49 remain pending in the present application. By this Amendment, independent claims 1, 29, 32 and 43 have been directly amended. Claim 36 is amended to correct a grammatical error.

It is believed that the foregoing amendments and additions add no new matter to the present application and no estoppels are intended thereby, and are made to place the claims in condition for allowance or appeal.

#### **B. Response to Action**

##### **A. Rejections under 35 U.S.C. §103(a)**

1. Claims 1-13, 16-17, 29-30, 32-39 and 41 were rejected under 35 U.S.C. §103(a) as allegedly unpatentable over Martin et al US 5,183,187, in view of Galia, US 4,433,797. This rejection is respectfully traversed.

Applicant claims an aerosolization apparatus and method, the apparatus comprising a container containing a pharmaceutical formulation, the container containing a first pressurizer comprising a fluid propellant, a metering chamber in communication with the container, the metering chamber adapted to hold a metered amount of the pharmaceutical formulation, and a second pressurizer that applies pressure to the pharmaceutical formulation in the metering chamber while the pharmaceutical formulation is being released from the metering chamber.

Applicant thus claims an aerosolization apparatus for aerosolizing and dispensing a formulation contained within a metering chamber wherein the aerosolization and dispensing is achieved by applying pressure to the formulation and wherein the pressure is supplied by two independent and distinct modalities.

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While applicants contend that these elements were present in the unamended claims, and as such fully distinguish over Martin et al and/or Gilia, to improve clarity, applicants have nonetheless amended independent claims 1, 29, 32 and 43 to more clearly recite the independent nature of the first and a second pressurizing means.

As noted in the prior response, Martin et al is inapposite in teaching a fluid dispensing apparatus which operates **solely** by mechanical action of a piston or plunger fluid driving means. There is but a single, or first, pressurizer in Martin et al, and no second pressurizer.

Gilia is limited to describing and claiming a dispensing valve for a pressurized container, nothing more. The sole source of pressurization for the product contained is a propellant gas, as well known to the art. Gilia does not teach, suggest or disclose an aerosolization apparatus as claimed, including a metering chamber holding a metered amount of a pharmaceutical formulation, and two pressurizing means acting independently wherein one of the pressurizing means applies pressure to the pharmaceutical formulation in the metering chamber while the pharmaceutical formulation is released from the metering chamber. The fact that a diaphragm (54) is interposed between the gaseous propellant of Gilia and the product to be dispensed does not mean that Gilia teaches two pressurizers, as claimed by applicant.

Gilia, in fact, can not properly be combined with Martin et al. because Gilia teaches away from applicants claimed invention insofar as the primary problem to which the invention of Gilia was directed is one of preventing excessive dispensing:

The volume expelled depends substantially on the time for which the valve is opened. In general, the valves are opened simply by pressing. This simple manipulation often results in keeping the valve open for too long and excessive product being expelled. This causes the product to be wasted. When using a product for therapeutic or cosmetic purposes, the **surplus amount of product can cause disadvantages** *[emphasis added]*

Gilia, Column 1, lines 25-32

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Dosing of a pharmaceutical plays no role in the invention of Gilia, which is described above as a non-specific "therapeutic or cosmetic purpose[s]", and below as:

...a dispensing valve for delivering a **liquid or pasty product** from a vessel surrounding a pressure space...*[emphasis added]*

Gilia, Column 1, lines 6-8.

In contrast, applicant's claimed invention is one of ensuring a controlled, uniform, and reproducible dose of a pharmaceutical is delivered from a container, having a source of pressurization. Such controlled, uniform, and reproducible dosing can be critical in delivering a pharmaceutical. As recited by applicants:

It is further desirable to provide an improved metered dose inhaler that is capable of effectively aerosolizing a large quantity of a pharmaceutical formulation. It is still further desirable to provide an improved metered dose inhaler with improved aerosolization efficiency and reproducibility

Applicants' Specification, paragraph 5; and

The present invention satisfies these needs. In one aspect of the invention a large and/or uniform aerosol dose of medicament is delivered from a metered dose inhaler.

Applicants' Specification, paragraph 6.

Nothing in Gilia or Martin et al would supply a teaching, suggestion or motivation to combine the references because Martin et al relies upon mechanical pressurization (i.e. plunger) while Gilia relies upon a gas, and neither are directed to dosing a pharmaceutical, therefore precision and reproducibility in dispensing was not a concern of either reference.

Accordingly, for at least the reasons that neither reference alone, or their combination (albeit improper), teaches an aerosolization device with two pressurizers, the obviousness rejection is unwarranted and should be withdrawn. Moreover, Martin et al, either alone or combined with Galia, cannot support an obviousness rejection of claims 29 and/or 30 for at least the reason that neither Martin et al nor Galia disclose or suggest a pharmaceutical formulation comprising insulin.

2. Claims 29-30, 43-47 and 49 were rejected under 35 U.S.C. §103(a) as allegedly unpatentable over Martin et al US 5,183,187, in view of Galia, US 4,433,797, and further in view of Riebe et al, US 6,644,306. This rejection is respectfully traversed as to the amended claims.

The deficiencies of Martin et al and Galia, individually or combined, as a basis for this rejection, have been described in the paragraphs above. The Riebe et al reference adds nothing to Martin et al, because Riebe et al is limited to teaching a simple valve, suitable for an aerosol container. Riebe et al is devoid of any teaching or suggestion of an aerosolization apparatus and/or method of aerosolizing a pharmaceutical formulation, and in particular does not teach, suggest or disclose such an apparatus having a first and second pressurizer.

Moreover the combination of Galia and/or Riebe et al with Martin et al is improper for the simple reason that that the two describe redundant approaches. Martin et al pressurizes fluid with a piston, thus no independent valve is necessary; rather, the piston is both pressurizing means and means for metering out the fluid. Galia and Riebe et al both represent the opposing approach, that is, a fluid propellant pressurizes a liquid within a chamber, which pressurized fluid is released by a valve. Thus, there is no teaching, suggestion or motivation to combine the references since the result would be the redundant aggregation of a piston-operated fluid dispensing means with a valve atop the dispenser.

With respect to each of the above rejections as applied to the dependent claims, as the independent claims are allowable over the prior art of record, then their dependent claims are allowable as a matter of law, because these dependent claims contain all features/elements/steps of their respective independent claim. *In re Fine*, 837 F.2d 1071 (Fed. Cir. 1988). Additionally and notwithstanding the foregoing reasons for the allowability of the independent claims, the dependent claims recite further features/steps and/or combinations of features/steps (as is apparent by examination of the claims themselves) that are patentably distinct from the prior art of record. Hence, there are other reasons why these dependent claims are allowable.

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**CONCLUSION**

In view of the foregoing, Applicant submits that pending claims 1-13, 16-17, 29-30, 32-39, 41, 43-47 and 49 satisfy the requirements of patentability and are therefore in condition for allowance. Reconsideration and withdrawal of all rejections is respectfully requested and a prompt mailing of a Notice of Allowance is solicited.

It is not believed that any further fee for extensions of time or for the net addition of claims are required. In the event that additional extensions of time are necessary to allow consideration of this paper, such extensions are hereby petitioned under 37 C.F.R. § 1.136(a), and any fees required therefore (including fees for net addition of claims) are hereby authorized to be charged to Deposit Account No. 50-0348.

If a telephone conference would expedite the prosecution of the subject application, the Examiner is requested to call the undersigned at (650) 283-6790.

Respectfully submitted,  
Nektar Therapeutics

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